

## *Dryopteris* × *correllii* *hyb. nov.* (*D. carthusiana* × *goldiana*), a Rare Woodfern Hybrid from Vermont

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ABSTRACT.—A hybrid woodfern, *Dryopteris carthusiana* × *goldiana*, is described and named from a specimen (at DUKE) collected in Monkton, Vermont in 1937. This is the first reliable report of this hybrid. The report is based on morphology of the specimen; no living plants have been found for cytological study. Previous reports of this hybrid combination are excluded.

Interspecific hybrids are of special interest in the study of the woodfern genus *Dryopteris* Adans.; more than 150 are known worldwide (Knobloch), including some 25 in North America (Montgomery, 1982). Some of these, although apparently sterile (not forming viable spores), are surprisingly common, including *D. carthusiana* (Villars) H. P. Fuchs × *intermedia* (L.) A. Gray (= *D. × triploidea* Wherry) and *D. cristata* (L.) A. Gray × *intermedia* (= *D. × boottii* (Tuckerm.) Underw.). Many potential hybrid combinations, however, have not been reliably reported, including the one reported here, the hybrid of *D. carthusiana* and *D. goldiana* (Hook.) A. Gray (but see Montgomery [1982] for a preliminary notice of this collection).

The plant shown in Figure 1 is the only known collection of this hybrid. It was collected by Donovan S. and Helen B. Correll in Monkton, Addison Co., Vermont, an area of abundant *Dryopteris* populations that include both parents. In addition to the abortive spores, it is distinguished by a number of characters that, to field workers familiar with the participating parents, are readily evident and not matched by any other hybrid combination. Specifically, it differs from *D. carthusiana* in the less fine (bipinnate vs. bipinnate-pinnatifid) cutting of the lamina, blunter (less spinulose) tothing, blunter pinnules, and dark (vs. pale) scales at the base of the stipe. From *D. goldiana* it differs in its finer cutting, triangular lower pinnae, and stalked proximal pinnules. Sometimes, *D. goldiana* itself may be quite spinulose, e.g. *Winslow 10102* (Vermont: Westmore: Mt. Pisgah, 19 July 1910, NEBC). However, these uncommon forms do not have triangular basal pinnae, stalked pinnules, or other characters evident in the hybrid. A closely related hybrid, *D. goldiana* × *intermedia*, is well distinguished from true *D. carthusiana* × *goldiana* (Evans and Wagner, 1964). Most significantly, that hybrid has abundantly glandular indusia and glands along the rachis; these are clear markers of *D. intermedia* parentage (Montgomery, 1982). In contrast, this hybrid is eglandular

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FIGURE 1. Correll's hybrid woodfern, *Dryopteris* × *correllii* Wagner (*D. carthusiana* × *goldiana*), from Monkton, Addison Co., Vermont. This is the only known specimen.

throughout. Also similar in overall aspect is *D. clintoniana* × *goldiana* (Dowell, 1908), but that hybrid has adnate pinnules, vs. the stalked pinnules of *D. carthusiana* × *goldiana*.

In keeping with an American tradition of naming woodfern hybrids for prominent botanists, this singular hybrid is here named for its discoverer, the late Donovan S. Correll (1908–1983).

***Dryopteris* × *correllii*** Wagner, *hyb. nov.*—TYPE: Vermont: Addison Co: Monkton; In bog near Monkton, 29 July 1937, *D. S. & H. B. Correll 7799A* (DUKE).

Planta hybrida e *Dryopteride carthusiana* et *D. goldiana* exorta, inter ambobus aspectu, a parentibus sporis abortivis differt. Frons usque ad 90 cm longinquitate (stipes 35 cm, lamina 55 cm); infimus stipitis vestitus squamis oblongi-linearibus, refulgentibus, castaneis, lamina subdeltoidea, bipinnata; pinnae proximae stipitatae; glandes laminis et indusiis desunt.

Stout terrestrial fern arising from hybrid parentage (*Dryopteris carthusiana* × *D. goldiana*) and of intermediate aspect. Spores abortive. Overall frond to 90 cm long (stipe 35 cm, lamina 55 cm). Basal stipe scales large, dark shiny brown. Lamina subdeltoid, bipinnate. Proximal pinnules conspicuously stalked, triangular; basal basiscopic pinnules longer than next most basiscopic pinnules; pinnules blunt. Laminar and indusial glands absent.

Only the specimen at DUKE is preserved. Duplicates may have been given to Dr. Henry Oosting for exchange, but to date we have not located any.

Wagner has discussed elsewhere various collections that had been suspected of being this hybrid. *Dryopteris* × *poyseri* Wherry from Swarthmore, Delaware Co., Pennsylvania, was the first plant reported as this hybrid (Benedict, 1909), but studies showed it to be a bizarre form of *D. clintoniana* (Wagner and Wagner, 1982, Figs. 1 and 2), as originally thought by its discoverer (Clute 1908).

More recently, a plant considered to be *D. carthusiana* × *goldiana* has been reported from Clarendon, Rutland Co., Vermont (Thorne and Thorne 1989). However, examination of this specimen (*F. H. & E. Thorne s.n.*, 14 July 1981) shows it to be an odd frond of *D. carthusiana*. The specimen is barren of spores, sporangia, or indusia, and lacks any scales; it is more spinulose than the specimen from Monkton. Furthermore, it shows anomalous developmental characters such as forked pinnae and distally winged costae. Therefore, this report is also excluded. As far as we know at present, the Monkton specimen is unique. Why this hybrid does not occur more frequently is an enigma.

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